



# Total Earth Pressure Cell

EPCRT

GA-EPC-201-HD

## Introduction

This instruction manual is prepared for all users of **Total Earth Pressure Cells** manufactured by **Geoants** and informs about their features, installation, and operation.

The Total Earth Pressure Cell is designed to measure **the total pressure on structures** and **total stresses in soil**. Some of the usage areas of the Total Earth Pressure Cells are for the measurement of stress changes in soil and fill materials associated with:

- Earth fill dams
- Embankments
- Bridges and Railroad Bases
- Diaphragm walls
- Fillers and Mine Backfill Monitoring
- Foundations, Retaining walls and Piles
- Pipelines and Culverts
- Slurry walls
- Tunnel linings

The pressure applied to the surface of the pressure cell is transmitted hydraulically to a pressure transducer using a resistance type strain gauge and readout unit placed between the plates.

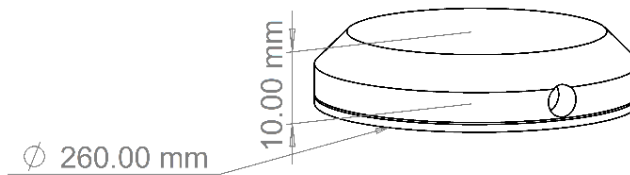


Geoants devices are sent after the testing and calibration stages. With proper use, it offers years of reliable service and a return policy. Please visit our website ([www.geodestek.com](http://www.geodestek.com)) to check the latest version of the user manual and to reach Product Updates and Customer Support.

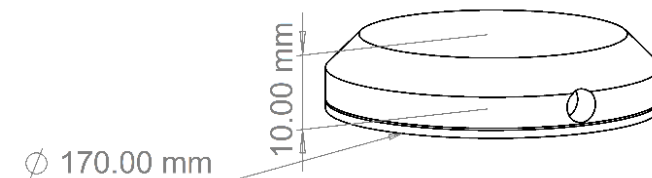
Particular features of the **Geoants Total Earth Pressure Cells** are:

- Decisive and stable measurement
- High accuracy; high sensitivity and resolution
- Rugged; corrosion resistance thanks to stainless steel material
- Output signal suitable for long-distance transmission

There are **two different sizes** of the device according to their usage areas.



For pressure measurement **in reinforced concrete structures and rocks**



For pressure measurement **on floors**



It is expected that the soil to be examined will have a **homogeneous** structure. If the soil is not in a homogeneous structure, the total soil pressure cells must be properly placed. For this reason, it is recommended to create a manually compacted sand bed 50-100 mm thick. After that, the cell should be covered with a layer of sand 100-200 mm thick.

## Taking Reading

The software can be downloaded from [www.geodestek.com](http://www.geodestek.com). After downloading the software, open the setup file and follow the steps below or [click here](#) to watch an explanatory Youtube video.

### Desktop Software:

1. Press the “**Scan Port**” button. Select the port to be connected via Bluetooth and press the “**Connect**” button.
2. You can save the data to the table by pressing the “**Start Recording**” button. You can define the constants a and b in the format  $ax+b$  in the “**Calibration Panel**” tab. Afterward, you



can view the calibrated values with the "View" button at the bottom of the "Calibration Panel" tab. To view the raw data, you must tick the "Raw Checkbox" box to the right of the "Data Grid View" button.

- To save the data as a CSV file; you must first press the "Stop Recording" button, then the "Export Raw Data" button, or the "Export Calibrated Data" button.  
*Note: To take precautions against sudden shutdowns, you must first tick the "Automatic Backup Checkbox" box. After this process, you should define "Backup Interval" and "Total Number of Backups". You can automatically record after the determined variables.*

### Android Based Mobile Application:

- Press the "Start Data" button and start recording data.
- If you want to perform calibration, save the data at the zero point and the slope value (a value in ax+b format).
- After the recording process, you can share the CSV file by clicking the "Share as CSV" button.

## Specification

<b>Sensor Type</b>	Total Earth Pressure Cell	<b>Recommended Excitation Voltage</b>	(4-10) V
<b>Pressure Range</b>	0.1 MPa – 5 MPa	<b>Operating Temperature</b>	-25 °C – 80 °C
<b>Output Ratio</b>	2 mV/V	<b>Waterproof</b>	IP68
<b>Accuracy</b>	± 0.8% F.S	<b>Weight – Except Cable</b>	250 g – 2000 g
<b>Linearity</b>	± 2.0% F.S	<b>Material</b>	ST37 Galvanized Steel
<b>Radius</b>	5 cm – 15 cm	<b>Coil Resistance</b>	350 Ω
<b>Thickness</b>	1.1 cm – 2 cm		

\*F.S: Full Scale